CLAIMS

1. A method for simultaneously exposing an array of test compounds with a detector layer, wherein the detector layer is overlaid by a buffer medium, whereby each test compound, upon contact, is dissolved in the buffer medium, and

wherein each array further comprises widely spaced control points of regular control compounds which give recognizable responses; the method comprising the steps of:

(a) contacting the array of test compounds held on a solid support with the detector layer through a membrane;

(b) reading the response plate, and

(c) using the true coordinates of these known compounds in the array to calculate a correction transformation to align points in the images of the detector layer with points in the array of compounds.

2. The method according to claim 1, wherein the number of regular control compounds which give recognizable responses is 3.

3. The method according to claim 1, wherein the number of regular control compounds which give recognizable responses is at least 3.

4. The method according to claim 1, wherein the number of regular control compounds which give recognizable responses is more than 3.

5. The method according to claim 1, wherein the solid support is a porous membrane, and the test compounds are allowed to diffuse from the porous membrane into the liquid layer overlaying the detector layer.

6. The method according to claim 1, wherein the test compounds are held on a non-porous substrate.

7. The method of claim 1, wherein the detector layer is physiologically viable cells.

8. The method of claim 7, wherein the physiologically viable cells form a monolayer.

9. The method of claim 1, wherein the detector layer is physiologically viable cells cultured on a porous membrane.

10. The method of claim 1, wherein the detector layer is scintillant plastic.

11. The method of claim 1, wherein the detector layer is a pH sensing surface.

12. The method of claim 1, wherein the detector layer is a temperature sensing surface.

13. The method of claim 1, wherein the detector layer is supported by an optically clear substrate.

14. The method of claim 1, wherein the detector layer is held stationary in the field of view of an optical detector and the array of test compounds is moved into contact with said detector layer during the course of measurement.

15. The method of claim 1, wherein the array of test compounds is held stationary in the field of view of an optical detector and the detector layer is moved into contact with said sample surface during the course of measurement.

16. The method of claim 7, wherein the detected response is a change in a luminescence property of the physiologically viable cells in the detector layer.

17. The method of claim 7, wherein the detected response is a change in a fluorescence property of the physiologically viable cells in the detector layer.

18. The method of claim 1, wherein the detected response is determined with an illumination system capable of exciting the fluorescence of the detector layer with any of a number of previously selected wavelengths with defined order and of defined time duration.

19. The method of claim 1, wherein the response is recorded by a sequence of images.

20. The method of claim 1, wherein the array of test compounds is generated on the solid support by combinatorial chemistry.

21. The method of claim 1, wherein the array of test compounds is generated by one- or two-dimensional gel electrophoresis.